

CENTRAL INTELLIGENCE AGENCY
INFORMATION REPORT

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COUNTRY	Czechoslovakia	REPORT		25X1
SUBJECT	Invention and Production of New Exhaust Muffler for Airplanes	DATE DISTR.	13 April 1955	
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This is UNEVALUATED
 Information

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
 THE APPRAISAL OF CONTENT IS TENTATIVE.
 (FOR KEY SEE REVERSE)

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1. The State Aeronautical Research Institute of Prague-Kobylisyl was charged at the beginning of 1953 with the task of producing a new type of exhaust muffler for airplane engines that could be manufactured on a mass-production basis.
2. The task was summarized in the expression: "a good muffler of noises resulting from exhaust gases in order to reduce to as little as possible the loss of time for filling the cylinders of the engines with the mixture of fresh air and vaporized gasoline." The muffling capacity of the new device must be such that the noise generated by an engine in operation must not exceed 60 decibels at a distance of 150 meters. This means that at a height of about 500 meters an airplane should not be heard on the ground.
3. The problem was brilliantly resolved by means of a large column lined with glass wool. In the cylinder of the column, the exhaust gases retain their speed in accordance with Bernoulli's equation: pressure and velocity remain constant. The gases, when going through the column, lose their power to develop noises without losing their velocity. In order to muffle any noises that might be generated by the vibrations of the column itself, the column is surrounded by a sheath, and the resulting space between this sheath and the wall of the column is filled with compressed glass wool.
4. The first results of the experiment were satisfactory, and as a result, mass production of the new device was begun in January 1954. National Enterprise 315 B (sic) of Radotin (N 49-59, E 14-22), formerly the Janka & Co. Plant, was to complete by March 1954 all the preparations for mass production. The 1954 plan called for the monthly production of 350 mufflers; this number was to be stepped up to 500 in 1955. The glass wool, supplied in pre-cut compressed sheets, is supplied by Podedbrady Glass Works National Enterprise S-XII-P-B.²

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(NOTE: Washington distribution indicated by "X"; Field distribution by "#".)

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2.  Comment: The reference is presumably to the Podebrady Glass Works (Podebradske sklarny) National Enterprise located at Jiraskova trida 223 in Podebrady (N 50-09, E 15-08).

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Legend to Annex

Noise Muffler for the Exhaust Gases of Airplane Engines
Scale: 1:15

- A. Exhaust pipe from the engine
- B. Exhaust pipe to the outside
- C. Sheath with space filled with glass wool
- D. Discs, disc-like screen
- E. Rings, annular screen
- F. Bell-shaped screen
- G. Sheath (wall of column)
- H. Outside sheath (of the outside container)



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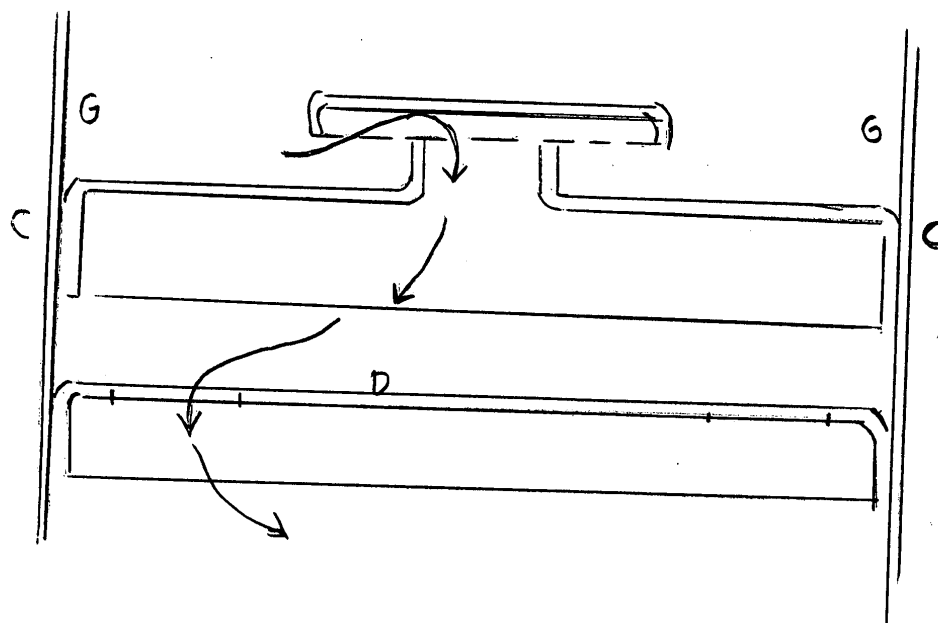
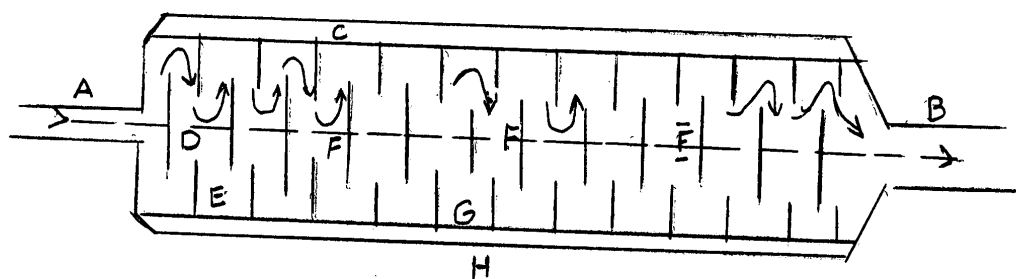
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Annex

Noise Muffler for the Exhaust Gases of Airplane Engines
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